GOOD GRIEF TAVERN (PWSNO 1110015)
SOURCE WATER ASSESSMENT REPORT

November 7, 2002

State of Idaho
Department of Environmental Quality

SOURCE WATER ASSESSMENT FOR GOOD GRIEF TAVERN

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like Good Grief Tavern, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for Good Grief Tavern* describes factors used to assess the well's susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use, well site characteristics, potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for Good Grief Tavern is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Well Construction. A 6-inch cased well, reportedly 190 feet deep, provides drinking water for Good Grief Tavern. The tavern is located at the intersection of Highway 95 and the Moyie River Road about 4 miles south of Eastport, Idaho. The well log for the Good Grief Tavern well is not on file with DEQ, so several construction features used to assess vulnerability to contamination are unknown. The well was drilled at an unknown date and is situated in a pit. The water system was not in compliance with the *Idaho Rules for Public Drinking Water Systems* when it was inspected in April 1999. The sanitary survey also noted violations of required separation distances between the well and the property line and the well and the septic tank serving the tavern. The well is about 35 feet from the river road right of way and 85 feet from the septic tank. IDAPA 16.01.08 (rules) specify a minimum 100 foot separation between a public drinking water well and an individual septic tank. The currently required separation between a public well and the property line is 50 feet. Needed improvements specified in the sanitary survey included:

1. Filling in the pit around the well and sloping the surface away from the well.
2. Making the well seal watertight and sealing submersible wires.
3. Installing a vent with the open end screened, facing downward and at least 18 inches above the finished surface.
4. Determining the location of the tavern septic tank and drainfield and if necessary, relocating them at least 100 feet from the well.

In response to the survey report, the tavern ownership cleaned the well pit, painted and sealed the pit interior, installed a concrete floor, a permanent ladder and a cover to keep debris out. The area adjacent to the well was backfilled and cleaned. The casing was extended to 24 inches above ground level and a new well cap installed. The tavern septic tank was pumped out and its location marked.

Well Site Characteristics. Hydrologic sensitivity scores are derived from information on the well log and from the soil drainage classification inside the recharge zone delineation. Soils in the well recharge zone for The Good Grief Tavern well are generally poorly drained to moderately well drained. Soils in these drainage classes provide some protection against migration of contaminants toward the well. Because the well log is unavailable, no information is available about the soil types above the water table at the Good Grief Tavern well site.

Potential Contaminant Inventory. Land inside the protection zone delineated for Good Grief Tavern is mostly forested. Highway 95 and a secondary road that parallels the Moyie River cross the delineation boundaries. A pipeline runs about 750 feet east of the well. As a route for heavy trucking, Highway 95 is a potential source of every class of regulated contaminant. The pipeline is a potential source of volatile organic chemical contaminants. The tavern septic tank, a potential source of microbial and inorganic chemical contamination, is the most serious threat to Good Grief's water quality since it is only 85 feet from the well.

Water Quality History. In the period from April 1999 through the present, only one Good Grief waster sample tested positive for total coliform bacteria. The contamination was attributed to construction activity. Annual tests for nitrates show concentrations ranging from 0.428 to 0.544 mg/l. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l.

Susceptibility to Contamination. An analysis of the Good Grief Tavern well, incorporating information from the public water system file and the potential contaminant inventory automatically ranked the well highly susceptible to microbial and inorganic chemical contamination because of the septic tank impinging on the sanitary set back zone. Susceptibility to contamination with volatile (VOC) or synthetic (SOC) organic chemicals is moderate. Unknown risks related to well construction and hydrologic sensitivity account for 6 of the 11 points in the final SOC and VOC susceptibility scores. The complete analysis worksheet for your well is on page 6 of this report. Formulas used to compute final scores and susceptibility rankings are at the bottom of the worksheet.

Source Water Protection. This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Operating and maintaining the well in conformance with the *Idaho Rules for Public Drinking Water Systems* should be one of the primary drinking water protection goals for Good Grief Tavern. Correspondence in the Good Grief Tavern water system file shows that the system is working toward bringing the physical plant into compliance.

A voluntary measure every system should employ is development of an emergency response plan. There is a simple, fill-in-the-blanks form available on the DEQ website (www.deq.state.id.us/water/water1.htm) to guide systems through the emergency planning process.

The tavern should also investigate ground water protection programs like Home*A*Syst. These programs are designed to help well owners assess everyday activities for their potential impact on drinking water quality. Topics include septic tank management, petroleum product storage, handling and storing lawn and household chemicals and similar activities. Because the tavern does not have direct jurisdiction over the entire recharge zone for its well, it will be important to form partnerships with neighboring landowners and public agencies to regulate land uses that can degrade ground water quality. Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

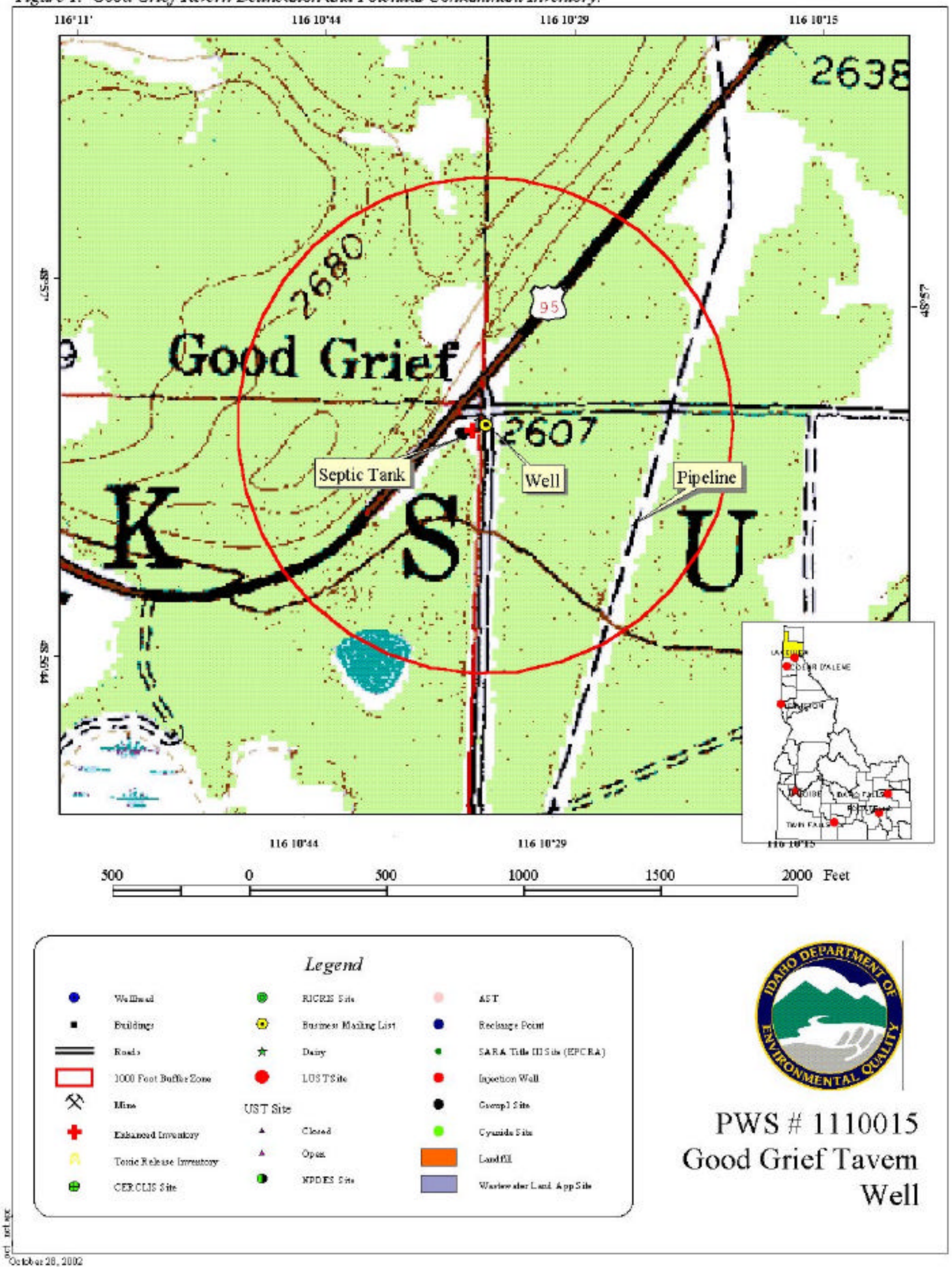
Assistance. Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

DEQ website: www.deq.state.id.us

Figure 1. Good Grief Tavern Delineation and Potential Contaminant Inventory.



Ground Water Susceptibility

Public Water System Name : **GOOD GRIEF TAVERN** Well# : **WELL #1**

Public Water System Number : **1110015** 10/28/02 9:16:14 AM

1. System Construction		SCORE			
Drill Date	UNKNOWN				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES 1999				
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	UNKNOWN	2			
Highest production 100 feet below static water level	UNKNOWN	1			
Well protected from surface runoff	NO	1			
Total System Construction Score		**5**			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	UNKNOWN	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	UNKNOWN	2			
Total Hydrologic Score		**4**			
		IOC	VOC	SOC	Microbial
3. Potential Contaminant / Land Use		Score	Score	Score	Score
Land Use	Rural	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources Sanitary Setback	Septic Tank 85 feet from well	YES	NO	NO	YES
Total Potential Contaminant Source/Land Use Score		**0**	**0**	**0**	**0**
Potential Contaminant / Land Use - 1000-FOOT RADIUS					
Contaminant sources present (Number of Sources)	YES. Highway 95, Pipeline	1	2	2	1
(Score = # Sources X 2) 8 Points Maximum		2	4	4	2
Sources of Class II or III leacheable contaminants or Microbials	YES	1	2	2	
4 Points Maximum		1	2	2	
1000-Foot Radius contains or intercepts a Group 1 Area	NO	0	0	0	0
Agricultural land use 1000-Foot Radius	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - 1000-Foot Radius		**3**	**6**	**6**	**2**
Cumulative Potential Contaminant / Land Use Score		**3**	**6**	**6**	**2**
4. Final Susceptibility Source Score		**10**	**11**	**11**	**10**
5. Final Well Ranking		***High**	Moderate	Moderate	***High**

***High due to presence of septic tank in Sanitary Setback Zone**.

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

0 - 5 Low Susceptibility
6 - 12 Moderate Susceptibility
> 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.